Eliminate Those Extra Kilos (or Pounds) with an Integrated Weight Management Approach

There are many reasons that those extra kilos/pounds cling to each of us. It can be due to stress, poorly functioning mitochondria, poor sleep, an imbalanced gut microbiota, low metabolism, hormone changes such as menopause or andropause, low thyroid levels, excess calories consumed compared to the amount burned, and simply aging.

The process of weight gain is multifaceted in terms of causes, and that's why a weight loss solution needs to involve a broad approach to restore your body to a healthier metabolic state.

This physician white paper will address the leading causes of weight gain and weight retention, and suggest ways to keep off the kilos/pounds by implementing an effective, weight management program.

Stress, Cortisol, and Weight Gain

Stress and the stress hormone cortisol are linked to weight gain. It's normal for the body to produce cortisol when under stress. However, after the stressful experience is over, if the body does not shut down the overproduction of cortisol, this will create problems.

Patients who are packing on the weight in their bellies have elevated cortisol levels.[1] Stress and cortisol regulate food intake and energy expenditure, and high cortisol triggers the desire and consumption of high-fat and high-sugar food.[1]

Different people react to high cortisol in various ways. Women who are high-cortisol responders often eat more when they're under stress compared to low-cortisol responders.[1] Likewise, in the study of animals that are high-cortisol responders, they are more likely to gain weight and become obese compared to low-cortisol responders.[1]

The Mitochondria Effect

Mitochondria are the "powerhouses of the cell," and they have a crucial role in generating energy and therefore burning calories from stored fat.

As we get older, the effectiveness of our mitochondria becomes a more significant but often overlooked weight loss factor. If your mitochondria is not functioning well, then your use of stored fat to burn calories is not functioning as well as it did when you were younger. This is why a younger person can typically consume far more calories on a daily basis than a middle-age or older person.

In addition, certain medications and toxins poison the mitochondria, such as air pollution and other environmental pollutants. Stress and aging will also impact mitochondrial function.

However, a recent study found that when fed a high-fat diet, mitochondria within the fat cells broke apart into smaller mitochondria, which were not as good at burning fat as the normal-size mitochondria.[2] In obese people undergoing intermittent fasting, a calorie-restricted diet, or a keto diet, mitochondrial

function improved due to those diets modulating the gut microbiota.[3] Clearly, there is a link between mitochondria and weight.

Fueling a Lean Body with ATP

Related to mitochondria and weight gain is the function of adenosine triphosphate (ATP), the universal energy molecule that fuels your cells. Sufficient ATP is absolutely essential for weight loss because it is involved in muscle contraction during exercise, promoting energy expenditure and burning of stored calories.

The human body contains only about 250–300 grams of ATP at any time. Each ATP molecule is recycled 1,000 to 1,500 times per day to meet energy needs. This equates to producing and using an amazing 65-90 kilograms (143-198 pounds) of ATP per day. Yes, per day! That's why giving your body building blocks to sustain the constant creation and recycling of each ATP molecule is critical.

ATP levels decline with age for the following reasons:

Mitochondrial_Dysfunction:
Mitochondria generate most of the ATP in cells. As we age, mitochondria become less efficient, and their numbers decline. This leads to reduced ATP production.

Oxidative_Stress:
Free radical damage builds up over time, can weaken your mitochondrial enzymes involved in ATP synthesis.

Reduced_New_Mitochondria:
Aging causes a decline in the expression of genes (like PGC-1α) that trigger the formation of new mitochondria.

Impaired_Ability_to_Use_Nutrients:
In older people, cells can't use glucose and fatty acids as well compared to when they were younger. These are the fuel sources for ATP synthesis.

DNA_and_Protein_Damage:
During aging, mitochondrial DNA and proteins are damaged, which can get in the way of the mitochondria's electron transport chain and ATP generation.

A study of skeletal muscle also found that mitochondrial ATP production declines with advancing age,[4] which is very problematic for people who want to lose fat instead of muscle when dieting.

Low Thyroid Levels Affect Weight

Supporting the thyroid is another mandatory step in a weight management program. The thyroid is the master source of our metabolic rate. Low iodine in the diet and fluoride in the water and soil can lead to an imbalance in thyroid function and promote weight gain. According to international research, about one in three obese people have overt hypothyroidism (low thyroid function), and about one in ten obese people have subclinical hypothyroidism.[5]

Obesity Can Start in the Gut

The intestinal microbiota can also regulate metabolism, the tendency to gain excessive body fat, and energy balance.[6] The state of the bacteria in your gut can control appetite and food reward signaling, which together play pivotal roles in obesity.[6] Also, a balanced gut microbiota supports a healthy inflammatory response in people who are overweight and obese.[7]

The Four-Step Approach to Effective Weight Management

In order to stay slim and keep off the weight, exercise and a healthy diet (such as the Mediterranean diet, intermittent fasting, or keto) is important. Staying away from sugar and processed carbs also is important. However, paying attention to all the factors just mentioned is equally critical.

Mitrogenis™ Mitochondria & Thermogenesis Integrated Weight Balancing Support

The central piece to an effective weight management system is Mitrogenis dietary supplement formula. It bundles ingredients which are known to support a healthy weight through a variety of mechanisms, including rejuvenating the mitochondria, maintaining thyroid health, stimulating thermogenesis, and supporting a healthy stress response.

Carnitine, Lipoic Acid, and CoQ10

These are the primary nutrients for enhancing the mitochondria to perform at their best.

Carnitine is essential for transporting fatty acids into the mitochondria, where they are burned for energy. It helps to facilitate the breakdown of fat for energy, making it crucial for cell metabolism and energy production.[8] By promoting fats for energy, carnitine supports mitochondrial function, particularly during intense physical activity or energy demand.[9]

Alpha-Lipoic Acid (ALA) is a powerful antioxidant that plays a critical role in mitochondrial energy production.[10] It is involved in converting glucose (blood sugar) into energy within the mitochondria and supports the regeneration of other antioxidants like vitamins C and E. It may also help improve mitochondrial efficiency and increase ATP production, the energy molecule that fuels cells. A review of the medical literature found that alpha-lipoic acid has a significant effect on maintaining a healthy weight.[11]

Coenzyme Q10 (CoQ10) is crucial for the production of ATP in the mitochondria. It is involved in the electron transport chain, a series of reactions that generate energy within the mitochondria. CoQ10 is also an antioxidant that protects cells from oxidative stress. It supports a healthy inflammatory response in overweight and obese people.[12] It also maintains healthy insulin levels.[13]

Carnitine, Alpha-lipoic acid (ALA), and CoQ10 can synergistically support mitochondrial health and weight management efforts. Carnitine aids in fatty acid transport to mitochondria, while CoQ10 supports ATP production, and ALA boosts the energy conversion process and protects against oxidative stress. By improving mitochondrial efficiency and protecting against damage, these supplements may help reduce feelings of fatigue and improve overall energy, so you're more motivated to be more active throughout your day, and add exercise to your weight management routine.

Iodine supports the health of the thyroid, which is the master source of our metabolism. Low iodine in the diet and high fluoride in the water and soil, which can compete with iodine uptake by the thyroid, can lead to an imbalance in thyroid function and weight gain. Research has found that iodine supplementation promotes a healthy cardiovascular system in overweight adults.[14]

Guarana, Capsicum, and Bitter Orange

Guarana (*Paullinia cupana*) is a plant native to the Amazon rainforest, renowned for its seeds that contain caffeine. Traditionally,

guarana has been used to enhance energy, improve focus, and aid in weight management. Guarana will help stimulate thermogenesis, the body's process of generating heat and energy from digesting food. Thermogenesis can increase calorie burning, which is foundational for weight loss. Guarana also stimulates mitochondrial biogenesis even when eating a high-fat diet.[15] Guarana also activates brown adipose tissue (BAT), a fat tissue that produces heat by burning calories. This activation could play a role in reduced body weight and improved metabolic health.

Capsicum contains capsaicin, the active compound found in chili peppers, which plays a potential role in weight management. Research suggests that capsaicin may support a healthy weight in several ways, including enhancing thermogenesis and metabolic rate, regulating the appetite, and helping the body burn fat more effectively.[16]

Bitter orange contains p-Synephrine, which is known for increasing energy expenditure and promoting fat oxidation during exercise.[17,18] Fat oxidation is the process where the body breaks down stored fat to generate energy (ATP) in the mitochondria.

L-Theanine Due to cortisol's effects on weight, the Mitrogenis formula also contains L-theanine, a dynamic amino acid in small amounts in green tea that promotes calm and relaxation, staying cool calm and collected while experiencing stress can help you be more victorious as you battle the stress hormone cortisol. A study also found that L-theanine can promote the browning of white fat tissue.[19] Brown fat burns fat to produce heat, while white fat tissue stores energy, making brown fat more advantageous to someone on a diet. Other research has found that L-theanine significantly reduced body weight and fat build-up.[20]

Bioperine is included in Mitrogenis because it enhances the bioavailability of the other nutrients in the formula so they can go right to work, supporting a healthy weight. Research also indicates this has reduced fat and maintains healthy lipid levels.[21]

Other Weight Balancing Supplements

8T8™ Elite Energy Drink
The ingredients in this formula boost your energy, making you more likely to exercise when on a diet. It contains a powerful blend of amino acids, B vitamins and caffeine. The combination of caffeine and L-theanine is especially effective in suppressing weight gain and fat deposition, making 8T8 an ideal weight management system component addition.

Microbiom Support™ Probiotics and Prebiotics
A weight management system should also include a good probiotic since the gut microbiota supports a healthy weight. Changes to the human gut microbiota can be considered a factor in obesity development.[22] The reason for the link between gut microbes and obesity involves genetic, metabolic, and inflammatory factors that are controlled by the gut microbiota.[22] Studies suggest that altering the digestive tract's bacterial strains can help change the metabolic profile in obese individuals to one associated with a healthy weight.[22]

Guardiant Formula™
The mitochondria need antioxidants to function properly. Guardiant Formula™ contains antioxidant nutrients supporting the mitochondria, including coenzyme Q10, N-acetyl cysteine, alpha-lipoic acid, and grape seed extract. It also contains iodine for thyroid health.

Conclusion

An effective weight management system must addresses several factors involved in weight gain and weight retention, including stress, poor mitochondrial function, thyroid health, and an imbalanced gut microbiota. In addition to exercising and eating healthy, an integrated, science-backed approach to weight management can help restore you to your ideal slender self by covering all the medical aspects of successful weight management.

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